TRENDS

Recent Trends In VA Treatment Of Post-Traumatic Stress Disorder And Other Mental Disorders

Veterans of earlier eras, especially the Vietnam era, account for a rising number of PTSD cases treated in the Veterans Affairs system since September 11.

by Robert A. Rosenheck and Alan F. Fontana

ABSTRACT: Treating post-traumatic stress disorder (PTSD) among returning Iraq/Afghanistan veterans is a high priority for the U.S. Department of Veterans Affairs (VA). The number of Persian Gulf–era veterans diagnosed with PTSD grew by 8,000 veterans per year from 2003 to 2005. Since 1997, however, the average annual growth in all users of VA specialty mental health services has averaged 37,000 veterans per year, including 22,000 per year with PTSD. This expansion was associated with a 37 percent reduction in mental health visits per veteran per year. The VA has substantially increased funding for PTSD services. Nevertheless, the observed growth in demand requires continued monitoring to assure that the needs of returning veterans are met. [*Health Affairs* 26, no. 6 (2007): 1720–1727; 10.1377/hlthaff.26.6.1720]

RECENT STUDIES HAVE demonstrated that combat exposure in Iraq and Afghanistan is associated with increased risk of post-traumatic stress disorder (PTSD) and elevated use of mental health services during the postdeployment period.[1] The Department of Veterans Affairs (VA) bears specific responsibility for providing mental health services to veterans with military-related mental health problems. The VA responded to the needs of 3.1 million Vietnam Theater veterans by establishing more than 200 storefront community-based outreach programs (the Readjustment Counseling Service) in the 1970s and 1980s and an array of more than 140 specialized PTSD treatment programs, alongside its network of general mental health programs.[2]

Between 11 September 2001 and April 2006, more than 1.2 million U.S. service personnel served in the Middle East, and about a half-million of them have made the transition to civilian life. The Government Accountability Office (GAO) has expressed concern as to whether the VA had adequate capacity to address the mental health needs of veterans who served in Afghanistan and Iraq.[3] Although the VA has expanded funding to address the needs of these veterans, the GAO noted that data have not been available on recent increases in demand for PTSD treatment or for VA mental health services more broadly.

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The demand for VA treatment of PTSD has expanded in recent years, among both veterans returning from the current Middle East conflict and veterans of previous service eras.[4] However, data have yet to be presented on the relative growth of VA mental health service use among Gulf War–era veterans compared with veterans of previous eras. The VA's ability to provide responsive, appropriate, and effective services to veterans of combat service in Iraq and Afghanistan will depend on many factors, including the number of staffers, the adequacy of their training, their past experience treating war-related PTSD, and the use of evidence-based practices.

Although data on these capacities are not available, we can evaluate the magnitude of the challenge the VA faces through an examination of patient-load trends among veterans with and without PTSD and among veterans of different military service eras, as well as through a consideration of whether increases in patient load have been associated with reductions in service intensity—that is, the number of clinic visits per veteran per year. VA mental health staffing is determined by annual congressional appropriations and allocation decisions made at local medical centers and, unlike either fee-for-service or capitation reimbursement systems, is not directly tied to patient loads. If increases in patient loads have been accommodated, in part, by reductions in service intensity, continuity of care and the likelihood of sustained involvement in treatment could be reduced, as could the use of evidence-based psychotherapies.

For this study we used administrative data from VA medical centers' specialty mental health programs to compare the growth in the numbers of veterans from the Persian Gulf era with growth in numbers of veterans who served in prior eras, and we evaluated associated reductions in the intensity of service delivery. We examined changes from fiscal years 1997–2005, with particular attention to changes following 11 September 2001 and after the initiation of combat in Iraq in FY 2003.

Study Data And Methods

■ **Sample and sources of data.** The sample included all veterans who received services for any mental disorder (*International Classification of Diseases,* Ninth Revision, or ICD-9, codes 290.00–312.99 or 310.xx or 331.xx, excluding 305.1 [nicotine dependence]) from inpatient or outpatient specialty mental health care programs in FY 1997, 1999, 2001, 2003, and 2005. We focused on specialty mental health service delivery because these are the professionals specifically trained to treat mental illness who have the greatest experience and expertise treating war-related PTSD.

Data were based on the VA's Patient Treatment File, which includes discharge abstracts of all inpatient episodes, and the Outpatient Encounter File, which documents all outpatient clinic visits.

■ **Measures.** Diagnostic data were used to classify each veteran in each year as having received either a diagnosis of PTSD (ICD-9 code 309.81) on at least one occasion or, among those who did not, a diagnosis of any other mental disorder. The sample thus represents all veterans who received VA specialty mental health services for a mental health diagnosis in these years. Multiple records were unduplicated using a scrambled identifier based on Social Security number.

Measures documenting each of six military service eras were derived from the first outpatient encounter for each veteran in each year: World War II or Korean War (1941–1955); Vietnam (1964–1975); post-Vietnam (1975–1991); Persian Gulf Conflict (1991–present); or other eras.[5] Two age cohorts of Vietnam-era veterans were identified: those born in 1949 or earlier, and those born after 1949.

VA administrative data do not allow identification of veterans who specifically served in Afghanistan or Iraq, or both, as contrasted with those who served during the overall Gulf War era, beginning in August 1991, although such data are received under special agreement with the Department of Defense and used for planning. However, we have defined two age cohorts: one born in 1972 or earlier, who would have been old enough to have served in the

first Gulf War; and the second born after 1972, who would have been too young to have served in that action and are more likely to have service in Iraq or Afghanistan.

■ **Analyses.** Descriptive data on all veterans who received specialty mental health services were stratified by whether they received a PTSD diagnosis or were diagnosed exclusively with mental disorders other than PTSD, as well as by service era, with selected age stratification, and by fiscal year. Data from the U.S. census were used to calculate utilization rates within the general veteran population. Because a 100 percent sample was involved in each analysis, inferential statistics were not applied.

Results

■ **Patient-load increase, FY 1997–FY 2005.** The total number of veterans served by VA specialty mental health programs increased by 295,986 (56 percent) over these years, an annualized rate of growth of 7 percent per year (Exhibit 1). The subgroup diag-

EXHIBIT 1
Changes In Numbers Of Veterans Receiving Veterans Affairs (VA) Specialty Mental Health Services For Post-Traumatic Stress Disorder (PTSD) Or Other Disorders, By Military Service Era, Fiscal Years 1997–2005

	Number of patients treated annually					Average annualized percent increase		
Diagnosis/service era	1997	1999	2001	2003	2005	97–01	01–03	03–05
PTSD								
All eras	139,062	159,176	181,020	219,237	279,256	7.5	10.6	13.7
Peacetime/other	6,107	5,898	5,815	6,357	9,615	–1.2	4.7	25.6
WWII/Korea	23,102	24,117	25,671	26,917	26,718	2.8	2.4	–0.4
Vietnam era	91,043	106,929	123,824	153,600	189,309	9.0	12.0	11.6
Born in 1949 or before	57,054	67,199	78,741	98,244	122,055	9.5	12.4	12.1
Born after 1949	33,989	39,730	45,083	55,356	67,254	8.2	11.4	10.7
Post-Vietnam era	10,506	12,521	14,301	17,692	23,034	9.0	11.9	15.1
Gulf conflict	8,304	9,711	11,409	14,671	30,580	9.3	14.3	54.2
Born in 1972 or before	7,874	9,075	10,442	13,093	21,676	8.2	12.7	32.8
Born after 1972	430	636	967	1,578	8,904	31.2	31.6	232.1
Non-PTSD MH diagnosis								
All eras	391,205	423,124	459,442	498,163	546,997	4.4	4.2	4.9
Peacetime/other	44,954	46,221	49,103	50,669	53,037	2.3	1.6	2.3
WWII/Korea	104,055	103,548	102,982	98,322	92,870	–0.3	–2.3	–2.8
Vietnam era	151,065	169,572	188,488	210,383	231,201	6.2	5.8	4.9
Born in 1949 or before	76,799	86,674	97,268	108,162	118,828	6.7	5.6	4.9
Born after 1949	74,266	82,898	91,180	102,221	112,373	5.7	6.1	5.0
Post-Vietnam era	70,033	77,997	87,320	99,427	112,436	6.2	6.9	6.5
Gulf conflict	21,098	25,786	31,549	39,362	57,453	12.4	12.4	23.0
Born in 1972 or before	19,429	22,885	26,774	31,522	40,342	9.5	8.9	14.0
Born after 1972	1,669	2,901	4,775	7,840	17,111	46.5	32.1	59.1
All veterans who received specialty MH care from the VHA								
All eras	530,267	582,300	640,462	717,400	826,253	5.2	6.0	7.6
Peacetime/other	51,061	52,199	54,918	57,026	62,652	1.9	1.9	4.9
WWII/Korea	127,157	127,665	128,653	125,239	119,588	0.3	–1.3	–2.3
Vietnam era	242,108	276,501	312,312	363,983	420,510	7.2	8.3	7.8
Born in 1949 or before	133,853	153,873	176,009	206,406	240,883	7.9	8.6	8.4
Born after 1949	108,255	122,628	136,263	157,577	179,627	6.5	7.8	7.0
Post-Vietnam era	80,539	90,518	101,621	117,119	135,470	6.5	7.6	7.8
Gulf conflict	29,402	35,497	42,958	54,033	88,033	11.5	12.9	31.5
Born in 1972 or before	27,303	31,960	37,216	44,615	62,018	9.1	9.9	19.5
Born after 1972	2,099	3,537	5,742	9,418	26,015	43.4	32.0	88.1

SOURCE: Data from VA workload files.

NOTES: MH is mental health. VHA is Veterans Health Administration.

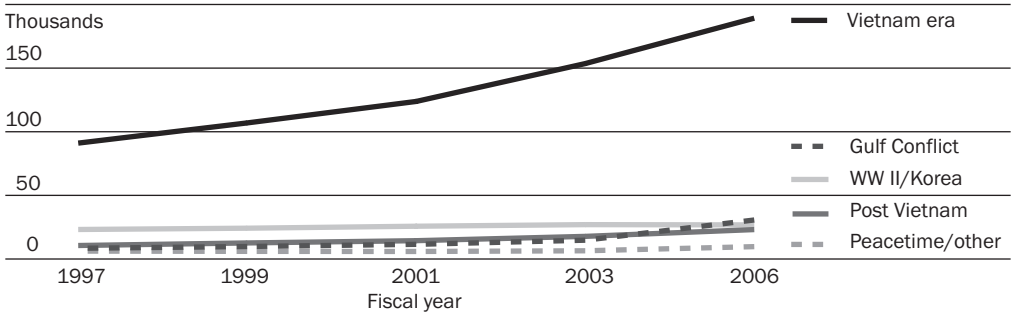
nosed with PTSD doubled from FY 1997 to FY 2005, while the number who received mental health diagnoses other than PTSD increased by 40 percent (Exhibit 1).

■ **Change in patient load by service era.** Only 16 percent (n = 22,276) of the annualized increase in PTSD mental health patient load from FY 1997 to FY 2006 is attributable to veterans who served during the Gulf Conflict era—that is, veterans who served from the time of the initial invasion of Kuwait in August 1991 to the present (Exhibits 1 and 2), with greater numbers among those born before 1972 (Exhibit 1) but more rapid proportionate growth in the group born after 1972. Most of the increase in PTSD treatment represents increased service use by veterans of earlier eras (117,918 veterans per year, or 84 percent of the total PTSD increase; Exhibit 2). More broadly, of the entire mental health patient load increase (including both PTSD and other mental health diagnoses), only 58,631 veterans (20 percent of the total) served during the Gulf War era. The vast majority of the increase in overall mental health patient load (80 percent, or 237,355 veterans; Exhibit 1) represents a fivefold greater increased demand by veterans of earlier eras, especially the Vietnam era, for both PTSD treatment (Exhibit 2) and treatment of mental disorders other than PTSD (Exhibit 3). There were modestly greater increases among older Vietnam-era veterans, born before 1949, than among those born later (Exhibit 1).

■ **Intensity of services.** The number of clinic contacts per veteran per year declined steadily and relatively uniformly across the years, totaling 37.5 percent from FY 1997 to FY 2005, an average of 4.7 percent per year, with reductions observed among both veterans with PTSD and veterans with other mental health diagnoses, and among veterans of all service eras (Exhibit 4). The total number of mental health clinic visits in this sample (number of veterans times average number of visits per veteran) declined 2.7 percent (from 10.18 million in FY 1997 to 9.91 million in FY 2005). The increase in patient load thus appears to have been associated with decreased service intensity.

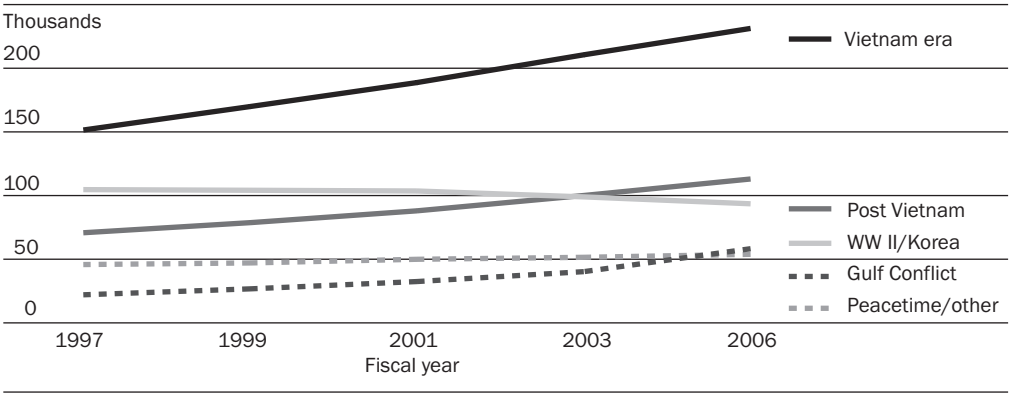
■ **Patient load in relation to 9/11 and the invasion of Iraq.** In Exhibit 1, the annualized increase during the first four years (FY 1997–FY 2001) for the diagnosis of PTSD was 10,490 veterans per year (7 percent) and 17,059 (4 percent) for non-PTSD patient load. The subsequent annualized increase, from FY 2001 to FY 2003 (that is, from 11 September 2001 through the invasion of Iraq), rose among PTSD patients by an average of 19,109 per year (10.6 percent), while the non-PTSD patient load increased at the about the same rate as previously (Exhibit 1). During the period after the beginning of Operation Iraqi Freedom through the most recent data point (from FY 2003 to FY 2005), the rate of increase in PTSD

EXHIBIT 2
Veterans Diagnosed With Post-Traumatic Stress Disorder (PTSD) In Veterans Affairs (VA) Specialty Mental Health Programs, Fiscal Years 1997–2005



SOURCE: Data from VA administrative workload databases.

EXHIBIT 3
Veterans Diagnosed Exclusively With Non–Post-Traumatic Stress Disorder (PTSD) Mental Health Or Addiction Diagnoses In Veterans Affairs (VA) Specialty Mental Health Programs, Fiscal Years 1997–2005



SOURCE: Data from VA administrative workload databases.

patient load jumped yet again, to 30,010 veterans per year (13.7 percent), while growth of the non-PTSD patient load also increased, albeit more slowly, at 24,417 veterans per year (4.9

EXHIBIT 4
Annual Average Outpatient Mental Health Visits Among Veterans Who Received Veterans Affairs (VA) Specialty Mental Health Services, By Military Service Era, Fiscal Years 1997–2005

	Average number of mental health visits per veteran per year					Average annualized percent change				
Diagnosis/service era	**1997**	**1999**	**2001**	**2003**	**2005**	**97–99**	**99–01**	**01–03**	**03–05**	**97–05**
PTSD										
All eras	25.2	21.1	18.8	16.6	13.9	−8.1	−5.4	−5.9	−8.1	−44.8
Peacetime/other	18.2	20.0	18.2	15.1	11.4	5.1	−4.6	−8.5	−12.0	−37.4
WWII/Korea	18.2	14.0	11.9	10.5	9.4	−11.5	−7.5	−6.0	−5.3	−48.4
Vietnam era	26.9	21.9	19.3	16.6	13.9	−9.4	−5.9	−7.0	−8.1	−48.3
Post-Vietnam era	34.8	31.9	29.3	27.6	23.4	−4.1	−4.1	−2.9	−7.6	−32.8
Gulf conflict	18.4	16.8	16.3	15.5	11.6	−4.2	−1.6	−2.6	−12.4	−37.0
Non-PTSD MH diagnosis										
All eras	17.1	14.9	13.5	12.6	11.1	−6.3	−4.8	−3.5	−5.9	−25.1
Peacetime/other	15.9	13.1	10.9	9.3	7.8	−8.7	−8.4	−7.6	−7.9	−50.9
WWII/Korea	10.5	8.2	6.8	5.6	4.9	−10.8	−8.7	−8.6	−6.7	−53.3
Vietnam era	21.1	18.2	16.3	14.6	12.5	−6.9	−5.0	−5.2	−7.1	−40.8
Post-Vietnam era	21.1	19.6	18.2	18.0	16.1	−3.4	−3.6	−0.7	−5.1	−23.7
Gulf conflict	10.6	9.9	9.6	9.4	8.4	−3.2	−1.4	−1.3	−5.0	−20.8
All veterans who received specialty MH care from the VHA										
All eras	19.2	16.6	15.0	13.8	12.0	−6.8	−4.8	−4.1	−6.3	−37.5
Peacetime/other	16.2	13.9	11.7	9.9	8.4	−6.9	−8.0	−7.7	−7.8	−48.1
WWII/Korea	11.9	9.3	7.8	6.7	5.9	−10.8	−8.0	−7.3	−6.0	−50.4
Vietnam era	23.3	19.6	17.5	15.4	13.1	−7.9	−5.3	−5.9	−7.4	−43.8
Post-Vietnam era	22.9	21.3	19.8	19.4	17.4	−3.3	−3.6	−0.9	−5.3	−24.0
Gulf conflict	12.8	11.8	11.4	11.0	9.5	−3.9	−1.7	−1.6	−6.7	−25.8

SOURCE: Data from Department of Veterans Affairs (VA) workload files.

NOTES: PTSD is post-traumatic stress disorder. MH is mental health. VHA is Veterans Health Administration.

percent). The vast majority of increases in patient load involved Vietnam-era veterans in both older and younger age cohorts.

The increase in the number of Vietnam-era veterans diagnosed with PTSD thus accelerated over this period, from an average of 7 percent annually from FY 1997 to FY 2001, to 10.6 percent from FY 2001 to FY 2003, and 13.7 percent from FY 2003 to FY 2005 (Exhibit 2). The increase in Vietnam-era veterans diagnosed with mental illnesses other than PTSD was slower and more steady, at about 5–6 percent per year. Older and younger Vietnam-era veterans had quite similar proportional rates of growth (Exhibit 1).

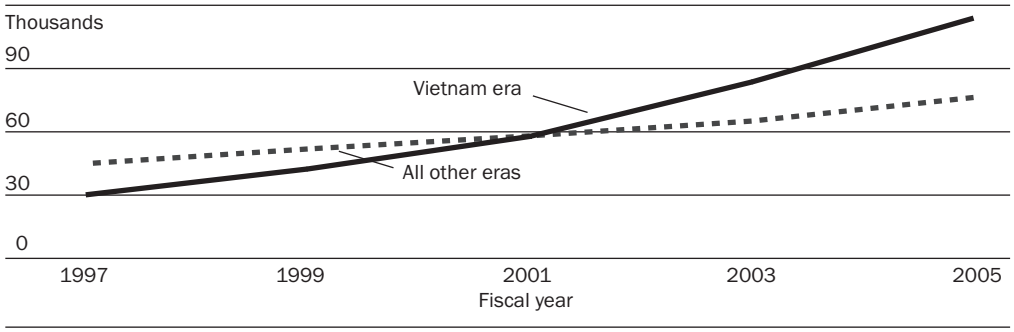
Among Persian Gulf–era veterans, there was sharp growth in the increase in the number diagnosed with PTSD (Exhibit 1), with parallel increases in treatment for mental health problems other than PTSD. Although the percentage increases were larger for Persian Gulf veterans, the numerical size of these increases was far smaller than those of veterans of previous service eras (about one-tenth the growth in PTSD service use by Vietnam-era veterans). Growth in the numbers of users among younger Gulf-era veterans (those born after 1972) accelerated rapidly so that by 2005 there were roughly equal numbers of older and younger Gulf veterans.

■ **Change in disability policy for Vietnam veterans.** Some of the dramatically increased patient load among Vietnam veterans may reflect a recent change in VA disability policy. In July 2001, on the basis of an Institute of Medicine (IOM) report that found increased risk of diabetes following exposure to Agent Orange, all veterans who served in Vietnam were granted presumptive eligibility for VA Disability Compensation for diabetes. As a result, there has been an eightfold increase in the number of Vietnam-era veterans receiving compensation for this illness—from only 18,000 in 2001 to more than 160,000 in 2004.[6] Additional analyses of the data presented in this study show that the number of Vietnam-era veterans receiving specialty mental health treatment with a comorbid diagnosis of diabetes (ICD-9 code 250.xx) increased by 72,000 from 1999 to 2005 (Exhibit 5). Although substantial, this increase in diabetes comorbidity could explain only half of the 140,000-veteran increase in specialty mental health service use among Vietnam-era veterans. Even among non-Vietnam-era veterans, the number of veterans receiving mental health treatment who had comorbid diabetes increased by 24,000, from 52,000 (14 percent) in 1999 to 76,000 (17 percent) in 2005, perhaps reflecting broader epidemiologic trends.

Discussion

Using national VA administrative data, we found that mental health service use among veterans of the Persian Gulf era has greatly in-

EXHIBIT 5
Veterans Diagnosed With Comorbid Diabetes Among Those With Post-Traumatic Stress Disorder (PTSD) Or Other Mental Health Diagnoses In Veterans Affairs (VA) Specialty Mental Health Programs, Fiscal Years 1997–2005



SOURCE: Data from VA administrative workload databases.

creased, especially after the initiation of military action in Iraq in 2003 and especially among younger veterans, those most likely to have recently served overseas. Active screening of returning soldiers by both the Department of Defense and the VA has likely contributed to this increase.

However, the increase in users of VA mental health services among veterans of earlier service eras was five times greater than that observed among Gulf-era veterans, especially among both older and younger Vietnam-era veterans diagnosed with PTSD. The average age of the older Vietnam-era veterans was fifty-nine years in FY 2005, but how long the increase in demand for services among these veterans will continue is unknown; thus, planning for this population is difficult.

"The growth in demand for PTSD services among veterans of earlier eras may pose a risk of attenuation of focus on recent combat veterans from Iraq and Afghanistan."

Intensity of service use, in contrast, declined steadily over these years, which suggests that the increasing demand might have been met by decreasing numbers of visits per veteran. Although mental health funding increased over these years, mental health budgets and staffing are not determined directly by workload. Although we lack data with which to determine whether this decrease in intensity had any adverse impact on quality of care or outcomes, it is likely that these changes are associated with declines in continuity of care and may have increased the risk of veterans' prematurely dropping out of treatment. We are unaware of any improvements in treatment technology during these years that would have resulted in a decline in the intensity of services.[7] Use of evidence-based psychotherapies is central to published guidelines for PTSD treatment, but data on the delivery of such services is not available from VA administrative data. However, the reduction in visits and thus treatment exposure may, if anything, reduce the likelihood that evidence-based psychotherapies are delivered.[8] Data on pharmacotherapy are controversial because selective serotonin reuptake inhibitors (SSRIs), used by 80 percent of VA patients with PTSD, have been found in many studies to be ineffective in war veterans with chronic PTSD.[9] We thus think that the data on patient load of the type presented here present as clear a picture as currently possible of the potential challenge faced by the VA in assisting this most recent generation of war veterans.

There has been increasing attention to the impact of "competing demands" on health services providers in recent years.[10] Also, the growth in demand for PTSD services among veterans of earlier eras may pose a risk of attenuation of focus on recent combat veterans from Iraq and Afghanistan. Initiatives to establish specialized programs specifically directed at these veterans is one approach to this problem, as "carve-outs" have been observed to assure equitable and efficient access to mental health services in competitive health care environments.[11] In FY 2007, the VA funded additional tens of millions of dollars in PTSD services and hundreds of millions of dollars in mental health program funding enhancements.[12] Although such resources, if sustained, may address the mental health needs of the newest U.S. combat veterans, other possibilities would be to encourage PTSD treatment in primary care clinics; further reduce mental health treatment intensity; or foster development of peer support groups.

The sharp recent growth in VA mental health service use for the treatment of PTSD among Vietnam-era veterans is puzzling, especially in view of similar rates of increase among both older and younger cohorts. Combat in Vietnam ended thirty years ago, and a growing volume of veterans seeking help for PTSD would not have been expected so long after the traumatic events took place. Changes in VA disability policy, allowing disability for diabetes among Vietnam veterans, explains only part of the observed increase in patient load. It

has been speculated that aging and retirement may contribute to increased symptoms and service use among older veterans.[13] These effects might have been recently compounded by the stress of the tragedy of September 11 or by televised accounts of the current war. Broad reductions in the availability of mental health services in the United States could also help explain why increasing numbers of veterans of all eras have sought VA services in recent years.[14] These interpretations, however, remain speculative.

Important limitations of this study are that VA administrative data provide no information on symptoms or treatment outcomes, and they do not allow differentiation between veterans who served during the Vietnam or Persian Gulf eras with and without combat exposure or who experienced combat trauma.

THE FIVEFOLD GREATER growth in number of veterans seeking VA treatment for PTSD and other mental health problems among veterans of earlier eras as compared to the Persian Gulf era poses the potential for competing demands for those now returning from the Middle East. Expansion of specialized programs is one possible way to address this situation. The reasons for the growing demand among older veterans are unclear, and they deserve further study.

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NOTES

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